AERONAUTICS

Subsidies for Air Transport

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THE impressions of American tourists returning from Europe during the last 18 months have been diverse in the extreme, but nearly every traveler includes somewhere among his recollections of things which startled him a memory of the extraordinary development of air transport. Leaving a land where commercial flying is at a standstill, he has journeyed to countries where air transport is accepted as a matter of course by the business man.

No one who has the slightest curiosity on economic questions can escape some surprise at finding that travel by air is, in some cases, actually cheaper than the making of the same journey by rail. From Paris to Warsaw, for example, the advantage in cheapness is distinctly with the airplane. Even where the relative advantage is reversed, in no case is the price of a ticket by air as much as double that of one by land or sea. Since no one who possesses even the most general knowledge of tranportation is able to believe that an airplane can be operated at as low a unit cost as a railroad train, the interested voyager naturally seeks for some extraneous explanation of phenomenally low charges. He finds that explanation in government subsidies.

American Misgivings

Once having heard that air transport is at present dependent largely on careful cultivation through a subsidy, the foreign inquirer usually loses all interest in the subject, at least so far as application to the United States is concerned. The long and bitter struggle waged here over a ship subsidy has seemed definitely to remove from the realm of practicality all proposals of government assistance to particular industries. When a large proportion of our foreign competitors have adopted a policy, however, it is not safe for us to pass that policy by without learning anything of it except its name. It may be that closer examination will reveal the airplane subsidy as less of a bugaboo than its title would lead one to expect.

Subsidies are being granted to companies operating commercial aircraft, at the present time, by the governments of Great Britain, France, Germany, Belgium, Holland, Rumania, and Poland. Several other states have made provision of such grants in their next year's budget. In fact, among the great powers, only the United States has never taken any steps to spend money in any way for the furtherance of civil flying.

There are many possible ways of giving a subsidy and most of the obvious ones appear to have been tested in practice by now. The most important are the purchase subsidy, the subsidy offered to manufacturers of aircraft, the operating subsidy based on mileage flown, and the operating subsidy based on volume of traffic. Most of the European countries employ combinations of two or more of these types. The purchase subsidy and the grant to aircraft builders have a common aim, the encouragement of the purchase of aircraft by commercial organizations or private parties. With this end in view, the state pays part of the purchase price of new airplanes, the money being either handed over directly to the manufacturer or refunded to the buyer. In France the amount of the subsidy is half the price of the aircraft.

Subsidies for operation are commoner than those for purchase, and have a more directly beneficial effect on the commercial use of aircraft. The first scheme of government assistance which actually went into effect after the war was the French plan of 1919, and the amount of financial assistance given was proportioned to the miles flown and to the nature of the service, lines running to the French colonies, for example, being much more generously treated than those plying between France and other countries in Europe. The provisions of the law were exceedingly liberal, and it soon developed that the plan adopted had the cardinal defect that it never would lead to the development of an air transport business capable of standing on its own feet. The payments by the government were so large that it was possible to operate at a profit with the airplanes entirely empty, and there was, therefore, little incentive for the operating companies to spend time and money in searching out traffic.

Successful British Plan

A much better plan, considered as a temporary prop to be withdrawn as soon as commercial aeronautics had demonstrated its ability to get along without artificial stimulus, was that employed in Great Britain. The British Government's first tendency, in view of the bad economic situation and the necessity of national economy, was to refuse any subsidy or any other assistance except the provision of landing fields, weather forecasts designed especially to meet the requirements of aircraft pilots and sent broadcast by radio, and other "ground services." French competition, however, and the rate war which early began on the London-Paris route, forced a reversal of the no-financial-assistance policy. When a subsidy was finally provided for, it was based on the amount of business done, the government paying over to approved companies an amount equal to a fixed percentage of their gross receipts on account of passengers and express. This proved so successful that the French subsidy law was modified to make a large part of the grant there, also dependent on the amount of business done.

The result of all this activity has been that the cost of traveling by air has been cut to 10 cents a passenger mile as a maximum. In some cases, due to exceptionally generous subsidy provisions and extreme currency depreciation, the cost runs to a fantastically low figure. The Deutsche Luft-Kursbuch, the ABC Pathfinder of German air transport, gives, for example, the rate from Berlin to Munich as 1575 marks. The distance is 320 miles, making the cost a passenger mile a little less than five cents at the rate of exchange which prevailed when the book was issued.

Cost Remarkably Low

The natural tendency, as a result of experience with proposals for shipping and other industrial subsidies, is for Americans to think of governmental outlays of scores of millions of dollars whenever the word subsidy is mentioned. As a matter of fact, however, the total expenditures on behalf of commercial flying have been astonishingly small. The total amount allotted for subsidies in the French budget during the last year, for example, was only 31,700,000 francs (approximately $2,400,000), and this sufficed to keep up daily services between Paris and Warsaw, Paris and Brussels, and Paris and London (three companies operating on this route) and a triweekly service between Toulouse and French Morocco, as well as several less important routes. The annual grant to the Deutsche Luftreederei, which operates most of the German air lines, was actually less than $300,000. In fact, the total amount expended in air transport subsidies by all the European nations together would hardly exceed $4,500,000.

An aeronautical engineer, knowing little of politics, may hardly venture to lay down policies for his country, particularly in a field so controversial as that of industrial or transport subsidy. It is at least interesting to see, however, what could be done with a rather small subsidy in the way of developing air transport on this continent. It may be assumed that a grant of 30 cents an airplane mile would be enough to assure the continuous operation of the service, while not making the companies independent of the necessity of seeking public patronage. An appropriation of $1,000,000 a year, then, a very moderate figure as governmental expenditures now run, would subsidize 3,300,000 airplane miles, or the operation of one airplane each way 300 days in the year over a total of 5550 miles of route. Referring this to the map of the United States it is found to provide for daily operation in both directions between New York and San Francisco, Boston and Norfolk, Chicago and New Orleans, San Francisco and San Diego, and Cleveland and Albany.

Conquering Fog

Fog has long been an acute problem of the aviator, and especially of the commercial pilot who, carrying mails or passengers, must go out substantially in all weathers if his service is to be of real use. The schemes devised to remove that difficulty have been too numerous for mention, but none has achieved any very marked degree of success in practice up to the present time.

The Parisian sporting daily, "L'Auto," in its issue of December 1, announces, however, the completion of the preliminary tests of a device which seems to have great promise under some conditions. It is the invention of M. William Loth, and consists of an electric cable emitting electrical impulses whose intensity informs the pilot as to his direction and distance from the route parallel to which the cable is laid. Similar use of electric waves as a means of guidance has frequently been proposed before, both for aircraft and for ships, but it does not appear that any public demonstration of the possibility of guiding an airplane in flight by such means was ever made before last Nov. 30, when M. Loth's invention underwent its trials at Villacoublay.

Directional wireless can of course be used for guiding an aircraft home to its field from a distance, but it does not suffice for the very accurate determinations of location required in actually passing over the field and coming down to land. It is claimed that, even, in its present tentative form, the Loth device permits the pilot to determine his exact location within 30 feet, thus enabling it to supplement the directional radio under the conditions where that is least effective.